# The Antique Radio Gazette

OFFICIAL PUBLICATION OF THE ANTIQUE RADIO CLUB OF AMERICA

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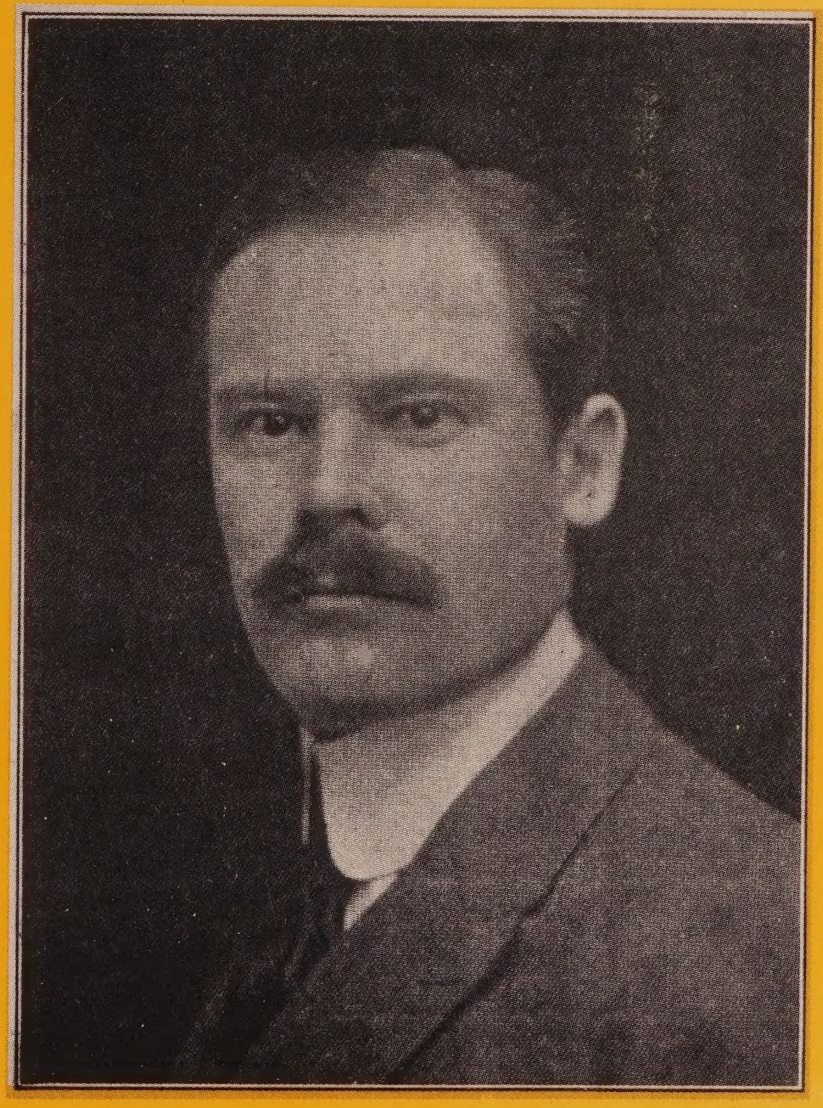

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It is our intention to have the Gazette published as closely as possible to the following dates:

March 31 — June 30
September 30 — December 30

The closing dates for receiving material of all kinds in order to have it appear in the next issue would be:

February 15 — May 15
August 15 — November 15

The Antique Radio Gazette is published quarterly in Madison, Connecticut.

**Yearly dues of $12.00 U.S. currency are payable to ARCA January 1, of each year for members in the USA, Canada, and Mexico. Overseas dues are $14, which includes airmail postage.**

The Antique Radio Club of America was incorporated in the State of Kentucky, in September, 1972. The first meeting was held at the Marriott Motor Inn, Washington, D.C., on September 23, 1972. At this meeting, by-laws were read and approved and directors selected. We feel that the inception of this Club is a giant step in bringing together those individuals whose chief interest lies in the area of early radio. We invite all collectors and historians of the subject to join the Club. A note to William E. Denk, Secretary, 81 Steeplechase Road, Devon, Pennsylvania 19333, will bring you an application blank by return mail.

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# President's Page

Spring is here again and that means that it will not be very long until we meet at the Spring Convention and Annual Meeting in Louisville, Kentucky. Convention details and registration material are included with this Gazette. John Caperton and his committee would appreciate it if you would mail your registration material as soon as possible so they can get a good idea of the attendance. Lloyd McIntyre and the rest of the members of the West Virginia Chapter of ARCA are actively working with John to plan the Convention. It should be the best ARCA Convention to date! I hope that we will see a good turnout this year.

The nominating committee worked very hard this year to come up with a slate of officers and new Board members to take office on July 1, 1986, following the official vote at the members' meeting at the Convention. I was surprised to be asked by the committee to stand for election for president again this year, but I agreed to serve just one more year, if elected. The group on the ballot is a fine one, and I look forward to serving with them. The full report of the nominating committee is printed elsewhere in this issue. Ballots will be mailed out before the Convention, in accordance with the by-laws, but the final counting of votes will be at the Convention. I thank the nominating committee for working as hard as they did to put a slate together. Mel Comer was chairman. Ross Smith and Les Rayner served with Mel.

Bill and Jane Denk tell me that dues for 1986 are coming in pretty well, but, as usual, there are those who seem to have forgotten. The forgetful ones will be reminded of that fact when they find a letter from the Denks, instead of a Gazette, in their package.

In the last issue, I asked those of you who would like to vote on proposed changes, let the Denks know of your interest. As I stated last time, this is to avoid sending the material to those who are not interested, to save the cost of postage.

See you at Louisville . . . .

JIM

## ARCA 1986 Conference Schedule

**Wednesday, June 11, 1986**

Activity Coordinators Meeting
The Tower Room – 7:00 pm
(Volunteers solicited and welcomed)

**Thursday, June 12, 1986**

Registration - Conference & Events
Open Air Traders Market
Tour John Capterton's
Radio Museum
Special Video Presentation
to be shown during the entire meet in the comfort of the Sebastian Zorn Ballroom.
ARCA Board of Directors Meeting
4:00 p.m. - 6:30 p.m. (The Tower Room)
Dinner-On-Your Own at the hotel or other fine restaurants in the Louisville area. (Special ARCA menu will be provided by the chef. Possible TRF, turkey, roast beef, fried chicken)

**Friday, June 13, 1986**

Registration - Conference & Events
Contest Registration
Special Bus Tour
Contest Judging (Closed to Members)
Contest Viewing - Public and Members
Special Presentaton:

1. Nathan Stublefield - "A Biography," presented by Bob Dickerson
2. Show & Tell - Mel Comer
3. Others to be announced

Open Air Traders Market
Annual ARCA Membership Meeting
4:00 p.m. - 5:00 p.m.
Auction Registration & Check-in

**Saturday, June 14, 1986**

Registration

Any last minute registrations may be taken care of at the "Information" trailer in the Open Air Market.

Auction Preview

Auction Registration

Auction begins promptly.

Auctioneer - Mr. Steve Waldron

Rules and information will be with your registration envelope

Open Air Traders Market

Special Bus Tours with Professional Guide

Cocktail Hour (cash bar)
6:00 p.m. - 7:00 p.m.

Annual Banquet and President's Address
7:00 p.m. - 9:00 p.m.

(Special guest speakers who will keep you on the edge of your seat.)

## Men Who Have Made Radio
## F. W. Alexanderson

Born in Upsala, Sweden, Jan. 25, 1878, Mr. Ernst Fredrick Werner Alexanderson was educated at the high school and University of Lund, Sweden, and at the Royal Institute of Technology in Stockholm, completing a Post Graduate Course at Berlin.

He entered the service of the C. and O. Electric Co. in 1901, and joined the General Electric Co. in 1902. He occupied the post of consulting engineer to the latter concern and was also chief engineer of the Radio Corporation of America.

After years of research and constant work, he developed a type of high frequency alternator suitable for Radio work, which is known today under his name. To be used in conjunction with this high frequency alternator for Radio telephone transmission, he designed the magnetic amplifier, which is used to modulate the antenna current.

In 1915, Mr. Alexanderson came in contact with Sr. Marconi during a visit to the Schenectady works, and an arrangement was made to install the large Radio frequency alternator and magnetic amplifier at the New Brunswick Station, owned by the Marconi Company.

This sending set gave full satisfaction, having a high degree of efficiency and was adopted by the Marconi Co. and the Radio Corporation of America to be used as a regular transmitter in all the big stations of these companies.

Besides these inventions, Mr. Alexanderson held numerous patents on various Radio apparatus.

While developing the magnetic modulator, he delivered at the American Institute of Electrical Engineers a very interesting paper entitled "Magnetic Properties of Iron at Frequencies Up to 200,000 Cycles per Second." This paper has been extensively quoted in the scientific literature in every country and is considered unique along this line.

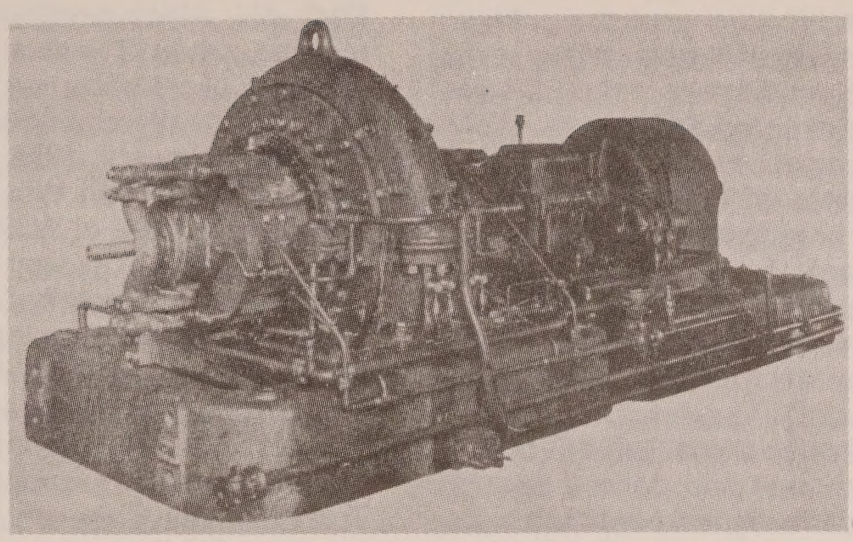
Mr. Alexanderson was a member of the American Institute of Electrical Engineers and of the Institute of Radio Engineers.

## The Early Years of the Radio Corporation of America

### by John Drake

At the close of the war (WWI) the only company in a position to handle commercial transatlantic radio communications was the Marconi Wireless Telegraph Company of America, although the stations which it had operated before the war were in the hands of the Government who had taken over all such stations for wartime purposes. This company was an offshoot of the British Marconi Co. and was largely owned by English interests.

At this time the best known means of long distance transmission was the Alexanderson high frequency alternator, the patents on which were owned by the General Electric Company. Negotiations between General Electric and the American Marconi Company, which had started several yars previous, but had been interrupted by the war, were resumed in 1919 for the purpose of transferring patent rights as



well as alternators to the Marconi Company which was anxious to expand its transatlantic services.

Certain high officials of the Government learned of these negotiations and were unwilling to see a growing communications service under foreign control, particularly since the transatlantic cables were in the hands of foreign, though friendly nations. Consequently they suggested to the General Electric Company that negotiations be suspended until after discussion with the Navy Department. This was in April 1919 and it is interesting to note that the letter to the General Electric Company was written by Mr. Franklin D. Roosevelt, then Acting Secretary of the Navy.

**Formation of RCA**

As a result of conferences with the Navy a plan was developed for forming a new American company to take over the assets of the American Marconi Company. So, on October 17, 1919, the Radio Corporation of America was incorporated, and on November 20, 1919 the entire business of the Marconi Company was taken over.

GE held a substantial interest in the new company, and immediate arrangements were made between RCA and GE to cross-license each other to use the radio patents of the GE Company and the patents RCA had just acquired from Marconi. Work was started at once on new high power alternator stations in California, Massachusetts and Hawaii.

But another patent deadlock soon appeared particularly with respect to vacuum tubes. The possibilities of long distance shortwave communications were unknown at this time. In fact, wavelengths under 200 meters were relegated to the supposedly unimportant use of amateurs. But, tube transmitters were needed for medium power services and, of course, tube receivers were essential.

Strong patents on vacuum tubes were held by both GE and the Western Electric Company, but neither could make effective use of its own patents without infringement of the other's. Again the Navy lent a hand and persuaded the GE Company and AT&T Company to come to an understanding "For the good of the public." This was in January 1920.

**Transoceanic Service Begins**

In February 1920, the stations which had been taken over from the Marconi Company by the Government during the war were turned back to the new RCA, and a foreign communications service were inaugurated. One of the principal stations was in New Brunswick, NJ, and the long-wave antenna there has no doubt been seen by a great many of you. During that year, foreign service was established with England, Germany, France, Norway, Japan and Hawaii.

In July 1920 an agreement was reached between RCA, GE, and AT&T which permitted RCA to proceed with the use of all radio patents of these

companies.

**Beginning of Broadcasting**

During the first year of the RCA attention was directed almost exclusively on communications, but in 1921 the first rumblings of what soon was to become a broadcasting boom began to be heard. A number of experimenters had been playing with the idea of transmitting phonograph music over somewhat crude telephone transmitters.

**Westinghouse Joins Radio Group**

Westinghouse had done a certain amount of radio experimentation in its laboratories, and shortly after the formation of RCA began to consider going into the radio field. A subsidiary company was set up known as The International Radio Telegraph Company which had acquired a large group of Fessenden patents from the old National Electric Signaling Company. Consideration was given to going into the communications business, but difficulties were encountered in that the important European stations were all tied in with the stations of the Marconi Co. now held by RCA.

To strengthen their position Westinghouse acquired a group of Armstrong and Pupin patents, among which was the Armstrong "feed-back" patent later to become quite famous. Finally, in 1921, a cross-license agreement was made between RCA, GE and Westinghouse, and Westinghouse now became a member of the radio group.

**Broadcasting Begins**

Meanwhile, strenuous efforts were being made to get broadcasting started. The pioneer licensed station of the United States, and of the world, was KDKA, of the Westinghouse Company, in Pittsburgh, licensed by the Department of Commerce on October 27, 1920. This station broadcast election returns in November of that year. RCA first entered this field on July 2, 1921, when a one-day broadcast was made from a temporary station at Hoboken, NJ, on the occasion of the Dempsey-Carpentier fight. Soon after, RCA opened station WDY at Roselle Park, NJ, which continued for some months, when it was shut down on account of interference with station WJZ of the Westinghouse Company in nearby Newark. RCA then went in as halfpartner with Westinghouse in the management of WJZ. Broadcasting was really on its way.

**Wireless Specialty Company**

Another corporate element entered the picture in 1921, the Wireless Specialty Apparatus Company. This was a Massachusetts concern largely occupied in making apparatus for the Tropical Radio Company, which in turn was a subsidiary of the United Fruit Company, and which operated coast and ship service for the large United Fruit fleet. GE bought into Wireless Specialty, and again made license arrangements which cleared up a few more of the patent obstacles to RCA's progress.

## DXING THE FEDERAL 110

I would like to thank the people who have taken the time and effort to write me concerning these articles. Several letters asked how the radios are selected for dxing. They are picked to represent a particular circuit type; also considered is how the public liked a set, judged by the number of them still in existence. We have taken a brief look at the TRF (AK 20) and a single circuit regenerative (Radiola IIIa). The circuit discussed here is an untuned or nontunable rf.

One of the more popular receivers using this circuit is the Federal 110. This set utilized one stage of nontunable rf, a detector, and a stage of audio. Federal described the circuit as a "single tuned circuit type." The radio featured controls for wave length, rf amplification, selectivity, and vernier tuning. While Federal did not call this set regenerative, it can be made to oscillate using the rf amplification knob, which changes the rf bias. Selectivity is controlled by a tap switch connected to a tapped coil, which contained a moveable vane for vernier tuning.

Wave Length is changed by a standard variable condenser. The nontunable rf stage uses an iron core transformer peaked at 220 to 550 meters.

Checking out my Federal 110, it appeared to be in very good physical condition. Upon performing some routine electrical tests, open audio and rf transformers were found. The audio transformer was replaced with an original from my junk box. A good friend of mine fixed the rf transformer and the set was now ready for testing.

Federal used universal rheostats in the 110. Tubes which could be used included WD12s, UV199s in adapters, and a 200 for a detector with 201As as amplifiers. The instrucion manual recommends the last combination where a storage battery could be used. The tubes I used included a CECO type H (200a equivalent) and 2 RCA 201As.

For the best operation of the 110, very good tubes must be used. Tubes that work fine in other sets did not always perform well in the 110. The A battery used was a 20 amp/hr 6 volt gel cel, while the B batteries were 3 Eveready #763s in series, tapped at 22.5 for detector, and 67.5 for amplifier voltages. All connections, except the output, were made to a well-marked terminal strip at the back of the chassis. There are several ways to connect a speaker or headphones. Two jacks on the front panel provide a choice of connection to the detector, or a stage of audio. In addition, binding post connections were provided. However, these could not be used without pushing a dummy plug into one of the jacks. Most of the listening was done with Federal 53-W headphones. A Dictograph horn was tried, but unfortunately, in most cases the volume was too low for comfortable listening.

Tuning on the Federal 110 is very complex, compared to many of the other sets available at this time. Outlined below are the steps necessary to receive a station, condensed from the original directions. Although I used this procedure for dxing, the 110 performed well, tuning just below the point at which oscillation occurs.

1. Set Selectivity switch on 5. Set Wave Length, Vernier, and R.F. Amp. at mid-adjustment.
2. Insert dummy plug in left hand jack. Insert headphone plug into right hand jack.
3. Adjust rheostats until tube filaments are burning brightly.
4. If using a UV200 detector tube, disconnect antenna, adjust detector rheostat until hissing is heard, then back off just below this point and connect the antenna. If a nongaseous detector tube is used, adjust for normal brilliancy.
5. Remove dummy plug from left hand jack and put headphone plug there.
6. Rotate R.F. amplification 3/4 of its full rotation. Rotate R.F. rheostat until a distinct click is heard in the headphones. Find the exact position where this occurs and leave it there.
7. Rotate R.F. amplification knob until a musical note is heard. If no note is heard, listen for a click and move the control slightly past this point. Move Wave Length dial until the musical note is heard.
8. Adjust Wave Length control for lowest musical note, rotate Vernier until note becomes so low as to be inaudible. Rotate R.F. amplification counter clockwise until voice or music is heard clearly. Readjust Vernier if necessary. If more than one station is heard change selectivity.
9. Readjust all rheostats for best

## RECEPTION RECORD FOR THE FEDERAL 110

| kHz | Station | City, State | W.L. | Ver. | Sel. |
|---|---|---|---|---|---|
| 1210 | WCAU | Philadelphia, PA | 0 | 50 | 3 |
| 1170 | WBRW | Bridgewater, NJ | 3 | 50 | 3 |
| 1130 | WNEW | New York, NY | 5 | 45 | 5 |
| 1090 | WBAL | Baltimore, MD | 9 | 50 | 4 |
| 1050 | WHN | New York, NY | 12 | 50 | 3 |
| 1070 | WKMB | Stirling, NJ | 13 | 63 | 5 |
| 1010 | WINS | New York, NY | 15 | 50 | 3 |
| 950 | WPEN | Philadelphia, PA | 21 | 50 | 3 |
| 930 | WPAT | Patterson, NJ | 22 | 57 | 4 |
| 930 | WCNR | Bloomsburg, PA | 23 | 50 | 3 |
| 900 | CHML | Hamilton, Ont. | 25 | 50 | 3 |
| 880 | WCBS | New York, NY | 27 | 50 | 4 |
| 850 | WEEU | Reading, PA | 30 | 47 | 4 |
| 790 | WAEB | Allentown, PA | 38 | 50 | 3 |
| 770 | WABC | New York, NY | 41 | 50 | 3 |
| 710 | WOR | New York, NY | 50 | 50 | 3 |
| 660 | WNBC | New York, NY | 60 | 50 | 3 |
| 620 | WSKQ | Newark, NJ | 70 | 50 | 3 |
| 610 | WIP | Philadelphia, PA | 73 | 43 | 4 |
| 590 | WARM | Scranton, PA | 79 | 50 | 3 |
| 580 | WHP | Harrisburg, PA | 84 | 55 | 5 |
| 570 | WMCA | New York, NY | 86 | 50 | 3 |
| 560 | WFIL | Philadelphia, PA | 90 | 50 | 3 |

W.L.=Wave Length
Ver.=Vernier
Sel.=Selectivity

performance and if necessary readjust the R.F. amplification.

10. To receive another station repeat steps 7 & 8.

Advertising is scarce for the 110; Federal seemed to put more emphasis on the 59 and 61. The only ads I could find were from catalogs. A catalog piece from late 1923 or early 1924 states the Federal 110 "when used with reasonable care in its manipulation will bring in signals over startling great ranges." It also claims "a remarkable simplicity of operation."

The dx performance of the 110 leaves something to be desired. Only two stations were received from other than neighboring states, and both of them use powerful transmitters. The number of stations received was low, even when the limited tuning range is considered.

As a collector, I find the Federal 110 fascinating. Materials, construction, and workmanship are beautiful. However Federal's claim for great range was not true, and as for the simplicity of operation, take a look at the condensed tuning directions. A person looking to buy a radio in the early twenties had many better sets to choose from. The Federal 110 had a relatively high price ($105), and an antiquated circuit design.

Jim McKinnon
605 No. Bridge St.
Bridgewater, NJ 08807

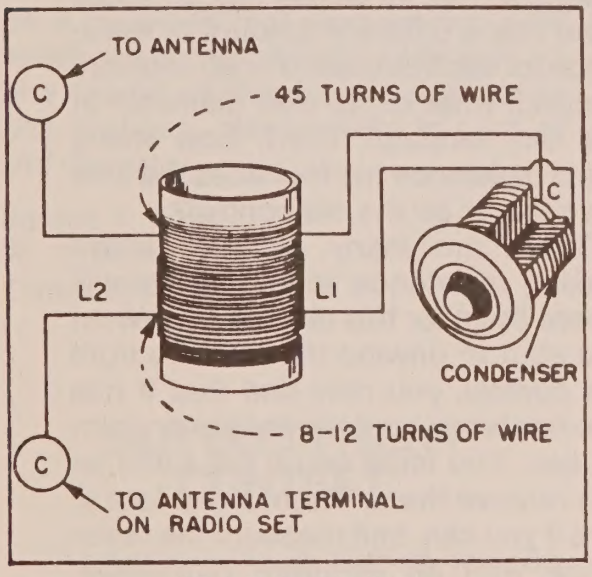
# Old-timer's Notebook

*James A. Fred* ©1985 J.Fred

I am happy to report that questions have been coming in very well during the winter months. This proves my contention that most of the restoration work is done during the winter months.

*Q.* I am having trouble with a strong local station interfering with one of my favorite radio stations. My radio is an older one that has poor selectivity. Is there an outboard assembly of some kind that I can build that will improve the performance of this radio?

*A.* What you need is a device called a "Wave Trap." A wave trap consists of a variable capacitor and a coil of wire. A wave trap is tuned to the frequency of the interfering station. The wave trap will absorb energy at this frequency and the station will sound much weaker than the station you want.




**WAVE TRAP**

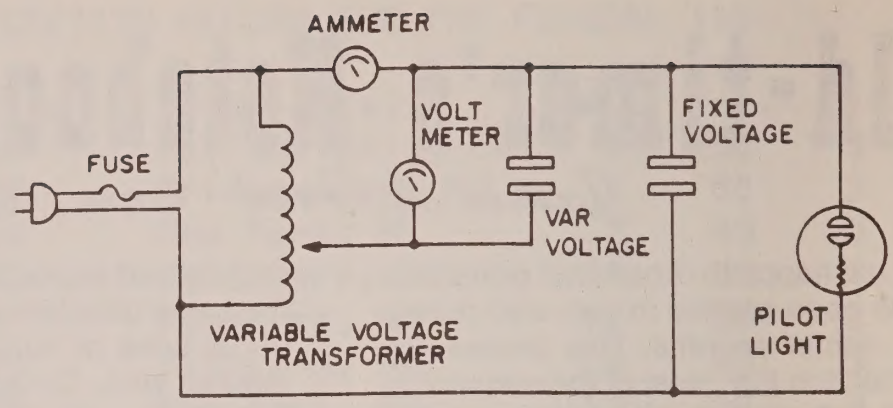
You can build a wave trap yourself by following this procedure. The version shown in the drawing was used in the 1920's. The coil consists of a 4 inch diameter non-metalic tube, either cardboard or plastic, with two windings on it. Winding L-1 has 45 turns close wound with number 28 enameled magnet wire. Over the center of this winding, wrap several layers of plastic or gummed paper tape. Now wind in the same direction coil L-2 consisting of 10 turns of number 22 enameled magnet wire. Connect the winding L-2 in series with the antenna and the antenna binding post on the radio receiver. Connect L-1 in parallel with a variable capacitor of 500 picofarads (.0005 mfd.).

To use the wave trap, the first step is to tune in the interfering station; now tune the wave trap until the station is at the weakest point. Now tune in the desired station. You might have to retune the set and wave trap several times to get the best results. It must be remembered that the wave trap will absorb energy on only one frequency at a time. If you have two interfering stations, you might try two wave traps in series and tune on to each signal.

*Q.* I have a round device, wound with wire, with the name "VARIAC," made by General Radio, on the nameplate. What is a Variac and is there anything that I can use it for in restoring old radios?

*A.* You have an electrical device that can be very valuable around your workshop. The word "VARIAC" is a trademark owned by The General Radio Company (now GenRad). Variac is a contraction of the words Variable Alternating Current. It is a variable voltage transformer. In other words, you can connect it to the power line and then pick off any voltage you need between zero and the power line voltage. It is an autotransformer and does not provide any isolation from the power line.

From the circuit diagram, let's see how it works. If we apply the 115 volts from the line to points "B" and "D" we will get 0 to 115 volts as we move "C" from "B" to "D". At "B" we will have full line voltage; at "D" we will have full line voltage. Due to some extra turns




**Author recommends this circuit configuration to anyone interested in building a variable voltage transformer for the shop or the repair bench. As a troubleshooting tool, it is ideal.**

from "B" to "A", an extra 20 volts will be available if we move "C" to "A", making the total 135 volts.

Now you are waiting for me to tell you how to use the Variac. First, it is useful in preventing burnout of power transformers in old AC operated radios. Use a circuit like that shown with a voltmeter and an ammeter. Set the Variac output at zero and plug in the radio set. Turn the knob and watch the ammeter and voltmeter. If the ammeter reads 2 amperes before the voltmeter reads 75 volts, you are in trouble. Most radios will have a current rating of less than 150 watts at full line voltage. By ohms law power equation, we know that amperes times volts equals watts. So 2 × 75 equals 150 watts, the maximum amount the radio should draw at 115 volts. You may have a bad transformer, a shorted filter capacitor, or a short in another component.

You can also make a variable voltage DC power supply with a Variac. You can use the power supply to run old radios, or make a leakage tester for electrolytic capacitors. If you plan to use the Variac with AC-DC radios, it is wise to protect yourself from shocks when standing on cement floors. To do this you use an isolation transformer between the wall outlet and the Variac.

*Q.* In reference to your 'Old Timers Notebook,' in the *Antique Radio Gazette,* I would like to know where I can get the wire to rewind volume controls. I am trying to rewind a 550 ohm control for a Radiola 66, but cannot get the 33 gauge nichrome wire I need anywhere around here.

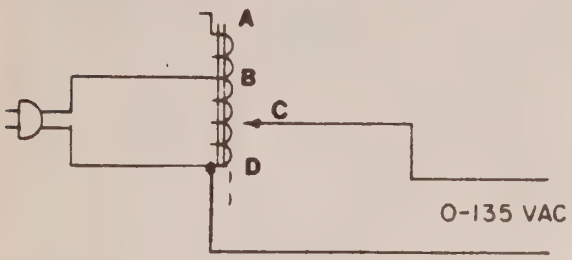
*A.* Rewinding a wire wound volume control is not an easy task. I worked twenty-five years for the resistor div. of the P.R. Mallory Company. They manufactured wire-wound fixed and variable resistors. There are several facts one must know before they can rewind a wire wound control.

First, does the control have a linear or an audio taper. With a linear control, the resistance variation will be constant for each degree of shaft rotation. There are many types of audio tapers, so just let us say that an audio taper has a different amount of resistance for each degree of shaft rotation. Second, what is the wire diameter of the old winding? Third, how many ohms resistance per foot does the wire have that is on the old control?

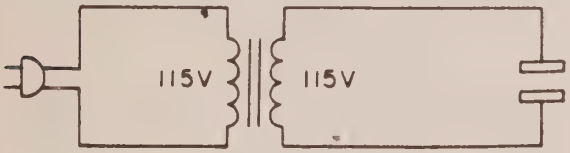
There are many different alloys making resistance wires, but we will ignore them for this discussion. When you start to unwind the old wire from the control, you may find that it has age-hardened, and it breaks every turn or less. You must count the turns as you remove them. Then take a foot of wire if you can, and measure the resistance with an accurate ohmmeter. These facts, along with the wire diameter will allow you to select the proper wire for the rewind job.

Now comes the real problem, where will you find the wire you need? Resistance wire sells for as much as $400.00 per pound. I know of no one who will sell a few feet of resistance wire to an experimenter or radio restorer. There aren't many solutions to this problem. It isn't practical to un-

wind an unused power resistor, or filament rheostat, because of age hardening. All heating element wire has too large a diameter.




**This circuit diagram describes elements of a 0-135 volt variable output transformer. Variable transformers such as this are very useful for powering all sorts of antiques.**




**Isolation transformers like this one pictured above are good safety devices when working on older radios with one side of the power line connected to the chassis. A transformer can prevent nasty shocks.**

Maybe a good place to start would be a business that stocked and sold small quantities of resistance wire. If any reader of this has an answer to this problem, please write in care of the Gazette.

James A. Fred
Rt. 1, Box 41,
Cutler IN 46920

## OLD EQUIPMENT CONTEST

The Antique Radio Club of America 1986 Spring Meet Louisville, Kentucky, June 11, 12, 13, 14 old equipment contest.

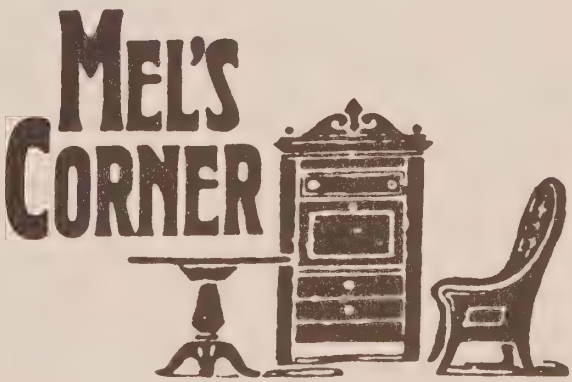
*CONTEST*

I) Crystal Sets
II) Regenerative Receivers
III) Receivers with RF Amplifiers (tuned or untuned, includes reflexed) Let's see some reflexes this year.
IV) Superhetrodyne Receivers
V) Radio Advertising (magazines, signs, store displays, promos . . .)
VI) Speakers (horn & cone) the more unusual the better.
VII) Novelty Sets (Hopalong Cassidy, Charley McCarthy, Blue Mirror, Lamp Radio, etc.)
VIII) Tubes That Tell a Story (tube displays with an explanation of their significance and history)
IX) Rare Books on Early Communications (telegraph, wireless, radio related . . .)
X) Test Equipment Used in Radio Servicing (signal generators, set analyzers, tube testers, chanalysts, etc.)

The Greater New York Vintage Wireless Association will hold a Spring Meet and Auction on Saturday, May 17th, at Ralph William's 'Voice of the Twenties" radio museum, Route 25, Orient Point, Long Island.

For more information, call:

| | |
|---|---|
| Ralph Williams | (516) 323-3646 |
| Steve Conklin | (516) 324-3012 |
| Bob Scheps | (516) 928-8981 |




Strange things happen when you collectors go looking around the countryside seeking old radio gear.

Years ago – when this hobby of ours first hit me – checks were made in every old radio store for miles around where the owners would laugh at the idea of old radios! Usual comment was,

"We threw that junk out way back." However, with a bit of jabber, some of these old timers would dig out a tube or so and maybe some old scrap parts.

Next came church lawn sales with everything under the sun displayed for any offer you wanted to make. Only once had any luck with these. Browsing around one sunny day at one of these sales, I spotted a big box piled high with wire and lamp fixtures. I was in need of some old twisted green wire, but the seller insisted I had to take the whole box of junk, which barely fitted into my car. After I got home (near my trash can) I started peeling off the top of this mess when I spotted a little wooden box with a round bulb mounted on it. Lo and behold, out pops a De Forest RJ-4 audion control! Filthy dirty, the tube still had a good filament! Knobs, dials, grid leaks, coils, all scattered around the bottom of the box along with a Clapp Eastham crystal detector! Luck—you bet!

Then came the barn deal up country. You have never lived until you get into one of these! Stored in the rafters above the barn floor there appeared to be some old radios. Dug up a rickety old ladder, which promptly broke a rung! Not to be dismayed, on up the ladder to see ten old sets covered with cobwebs, hay, and dirt. Crawling, reaching in the dark, first one I grabbed —out came a family of mice! They scattered in all directions, with one up my coat sleeve! One by one I tossed the sets down to the farmer and then got down to survey the situation.

Old sets have peep holes through the panel in order to see if the tubes are lit. This makes an excellent passageway for mice to enter a closed cabinet. No problem to chew away the wire screen and enter on a Westinghouse RC—first one I examined. Inside all is green and corroded.

Mice apparently know good radios like the RC there and a Grebe CR-5, also with a peep hole. They disdain the Crosley and Atwater Kent cabinets —too much wood to contend with. One thing I discovered, they love to chew on open core audio transformers —fine wire—why? They must have had a ball in the next set I opened–a Freshman Masterpiece with open basket weave tune coils! I couldn't believe these critters managed to crawl through the small holes for a cable.

Needless to say, the Grebe and RC were toted out of there in spite of their condition, to be fumigated and salvaged for parts. The rest of the items were in such deplorable shape, I left them for the farmer's posterity!

Along the way came the flea markets. Old radios? Nope—we don't fool with that stuff! Hire a "picker" who cleans out households was the only suggestion. But here you take everything—good or bad. Once he hauls it in—it's yours for whatever!

Finally, just a very few of the flea merchants caught on. May be something to this? A few radios started to appear at stands, all at bargain prices. As this era moved on, more sets started to appear—most of them electrics—called "plug-in's". Now and then a battery set. Who would want one of these?

More and more collectors came on the scene and the flea merchants opened their eyes to the escalating values! There is hardly a flea market these days that turns down old radios when they find them. Most still have no idea as to values. Set the price high and see what happens. Buyer—beware!

The day of the cathedrals and Tombstones and art-decos is now with us. What's the future to bring? Flea merchants now want sets that work. Who is to restore and repair them?

The hobby goes on but again, speaking of the mice, reminds us of a famous saying of Robert Burns—"The best laid plans of mice and men go aft astray." Don't get tangled with the mice.

It takes a wary collector to skin a cat!

CHEERIO!!

Mel Comer
205 Roberts Road
Ardmore, PA 19003

# COLLECTOR'S BOOKS

Antique Radio Restoration & Price Guide ..... $10.95
Seventy Years of Radio Tubes & Valves
By John W. Stockes (HC) ..... 21.95
Radio Enters The Home, 128 pgs. 8½ X 11 ..... 12.50
Radio Equipment & Supplies - 168 page reprint ..... 12.50
Stromberg Neutrodyne Receivers - 5 X 7 paperback ..... 3.95
Crosley Radio Catalog, circa 1923, 32 pages ..... 4.00
Westinghouse Apparatus, circa 1920's, 8½ X 11 ..... 4.00
Donate Less To The IRS (a must for every collector) ..... 6.95
How To Repair Old-Time Radios ..... 7.95
Vintage Radio Handbook, 263 pages, 1000 illus. ..... 9.95
Flick Of The Switch 1930-1950, 312 pgs., 1000 illus., (HC) ..... 12.95
Most Often Needed Diagrams 1926-1928, 600 models ..... 9.95
1921-1932 Collector's Guide, 264 pg., 9,000 models ..... 9.95
Atwater Kent Radio Parts Book, 24 pages,
Model 9 plus 50 speakers ..... 4.95
Man of High Fidelity, Edwin H. Armstrong, 271 pages PB ..... 2.00
Early Wireless, Anthony Constable, HC (printed in England) ..... 12.95
Collecting Phonographs & Grammophones, Christopher Proudfoot
Hardcover, full color illus. Reg. $14.95 - Special ..... 12.95
Modern Electronics, 36 page reprint on the 75th anniversary
of Radio Electronics ..... 2.50
Wireless & Electrical Encyclopedia, 178 page 1918 catalog,
The Electro Importing Co. ..... 4.95
The Cat's Whisker, 50 Years Of Wireless Design
by Jonathan Hill, 8½ X 11 full color cover, 95 pages ..... 9.95
Atwater Kent Radio - A Look At The Atwater Kent
Manufacturing Company, a 6 X 9 reprint, 32 pages ..... 4.95
Instructions for Operating Grebe Radios, 64 pages pocket size ..... 4.95
Radiola Super - Hetrodyne 2nd Harmonic ..... 4.95
Atwater Kent Radio Log ..... 1.00
Atwater Kent Instruction Book Vol. 1 an exact color duplicationof the original ..... 8.95
Grebe Syncrophase Instruction Manual, 70 pages, an excellent reproduction ..... 10.95
Official Radio Service Manual, 1930 Hugo Gernsback publication,
8½ X 11, 356 pages - "a true value" ..... 19.95
The Story of Nipper and His Master's Voice, 64 pages, illustrated ..... 6.50
Radio Collectors Pin (the size of a quarter, done
in high metal relief and porcelain) ..... 4.95

All orders under $25.00 enclose $1.00 postage — Orders over $25.00 shipped free.

WE HAVE DETERMINED THAT ALL OF THESE PUBLICATIONS ARE THE VERY BEST OFFSET QUALITY.

ORDER FROM

**Antique Radio Club of America, Inc.**
**Charleston West Virginia Area Chapter**
**4204 Thorn Apple Lane**
**Charleston, West Virginia 25313**

# Ye Old SWAP SHOP

WANTED: Majestic Rings, C1930, apparently handed out to qualified Majestic sales reps as promo scheme, caption on face of ring reads "Majestic The World in your Home."

Don Matteson, 1399 Badgley Road
Jackson, MI 49203

---

WANTED: IP501A in decentt condition, also 1959 Electronics World magazine.

Andrew Mooradian, 5 Priscilla Lane
Winchester, MA 01890

---

FOR SALE: Solid State AM Broadcasters which enable the old radio enthusiast to play recordings of old radio programs through any radio without connecting wires. $11 price inc. shipping. Send SASE for more info plus listing of radios, parts and other paraphernalia for sale.

Stan Lopes, 1201-74 Monument Blvd.
Concord, CA 94520

---

WANTED: 7.5V., 4A. F.I. x FMRNational FB-7 Preselector. National coil cabinet, table, power supplies, other National items, NHU, NC-44, NC-200, other Rcvrs.

Paul Gregg W9POC, 725 College Way
Carmel, IN 46032

---

WANTED: Am in need of a Philco Model 90-B in any condition. Please describe and quote price.

Bob Storm, 348 Hunter
West Palm Beach, FL 33401
Tel: 305-582-2806

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FOR SALE: Thousands of tubes in stock, most electric types at present. Repair service available. State needs, costs reasonable.

Rick Weibezahl, 305 Belvedere Ave.
Washington, NJ 07882

---

WANTED: I specialize in Scott receivers. Always on lookout for rare models, parts and literature on these.

Bob Karow, 620 Cortleigh Dr.
York, PA 17402

---

WANTED: Looking for unusual portable receivers of early manufacture. Most anything in WWI Military items.

Mel Rosenthal, 507 S. Maryland Ave.
Wilmington, DE 19804

WANTED: Wooden knobs for Victor RE-57 radio/phono, clock case for ERLA cathedral w/Hammond clock inside speaker (have clock but not right case).
Barry Kasindorf, 8 Maymount Drive
Framingham, MA 01701 Tel: 617-877-4947

---

WANTED: Audio for Type 5 Crosley, AK-82-90-92-217 and others. AK Type II tuner and other breadboard components.

Ophelia J. Nicholson, 3423 Long
Topeka, KS 66605 Tel: 913-266-9473

---

WANTED: Paragon Da-2 detector amplifier unit, state condition and price. Will consider one needing restoration.

Floyd Bennett, 7736 Kirkville Rd. N.
Kirkville, NY 13082

---

WANTED: Anybody have a commercial made Rotary Spark Gap for sale or trade on early gear? Also looking for quarter or half KW early spark transformers.

Mel Comer, 205 Roberts Rd.
Ardmore, PA 19003

---

SALE/TRADE: Have in stock various size Atwater Kent mounting boards only. You find components. Will trade boards for AK components needed, such as Type II tuner, RF transformers, CC tuner, Detector and tube units, Misc. AK parts for breadboards. All boards at reasonable cost, various sizes, finished or unfinished.

Lawrence D. Barry, 212 N. 6th St.
Chambersburg, PA 17201

---

HELP! Need info and instructions for operating an EICO SIGNal Generator Model 324. Am new at this. Thanks!

Ken Kelly, 475 Linden Lane, Apt. 112
Media, PA 19063

---

FOR SALE: Have some new Clough Brengle test instruments. CRA oscillograph, OC-A RF signal generator, OM-A Freq. modulated RF Signal Generator. Call daytime free:

Charles Barone, 5628 N. Prospect Ave.
Norwood Park Twnp., IL 60631
Tel: 800-323-1284

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FOR SALE: 8 brand new RCA 6E5 tubes $50 or $10 ea. plus postage. Also available large quantity of used loctal types of Philco tubes. All inquiries answered. All tubes set or meter tested before shipping.

George Greenberg, 821 Porter St.
Phila., PA 19148 Tel: 215-468-0293

---

WANTED: Neutrowounds in good original condition w/all tube covers. Also need cabinet (w or w/o lid) for Crosley 51.

Brian Rhodes, 90 Frances Ave.
Stanhope, NJ 07874 Tel: 201-398-5746

WANTED: Cabinet for Radiola II; a UZ-1325 RCA speaker in excellent cond. (must work); need any info and history on Guild Radio TV Corp; need any info and history of German radios of the 1950's, Telefunken, Normenden, Grundig, etc.; need an Arvin Model 444 in good condition.

John Pisarski, 114 Evans Rd.
Norristown, PA 19403 Tel: 215-539-0756

---

WANTED: Low priced table models, up to 1959, table model TVs. Am a beginner on a budget.

Bryan Gadow, Rt. 2, Box 280C
Preston, MD 21655

---

BEST OFFER: RCA Radiola III, in parts, needs to be reassembled. Case, good condition. Also RCA Radiola 60. Super het receiver, nine tubes, no speaker, case needs refurbishing. Intact. Several speed keys or "bugs" and telegraph sounder (Bunnell) and an old Western Electric Co. hand key.

Jos. W. Hess, Jr., 172 W. Lancaster Ave.
Paoli, PA 19301 Tel: 215-644-0323 (KU3N)

---

WANTED: Old transmitting tubes, amateur or commercial. Help preserve the old tubes for future generations to see and admire.

Ye Olde Transmitting Tube Museum,
P.O. Box 97, Crescent City, CA 95531

---

WANTED: 6 486 tubes for Sparton 39. Also Input trans. for West. (Can) 801 RCA R7-8-9, Primary 720 ohms. Sec total 5700 ohms.

John McDougall, 53-2401 Ord Rd.
Kamloops B.C. Canada V2B-7V8

---

WANTED: Variable tuning capacitor Atwater Kent Model 80. Aluminum shield cover for I.F. transformer AK 80. Dial for Philco 60 part #27-5102.

William Albohn, 150 Walter Ave.
Thornwood, NY 10594

---

FOR SALE: Home made crystal set $120 (nicely constructed radio, uses a 'B-Metal Eveready permanent detector, even has rubber foot pads). Westinghouse miniature console store display $100 (has light inside which shines thru dial & 2 multicolored celluloid panels in either side of speaker grill). Majestic 460 (1933, mint, except grill cloth not original, untested) $100. Philco 60B (1936?, front exc, top vg, works) $120. Atwater Kent E-2 speaker (1927, exc., just needs a good cleaning, works) $40. Late 30's phono cartridges, bulb shaped tubes. Send large 2 stamp SASE for complete and up-to-date photo list.

Ron Boucher, 376 Cilley Rd.
Manchester, NH 03103 Tel: 603-669-1698

---

WANTED: Kiel Table for Atwater Kent Model 60. See page 63 of "Flick of the Switch."

James M. Cole (K4HRO)
240 Gillespie Drive, Abington, VA 24210
Tel: 703-628-2835

CASH for Radios & Parts.
WANT: all colors & styles by Motorola, Fada, Bendix, Dewald, Emerson, Garod, Sentinel, Addison, Knight, etc., must be bakelite.
ALSO WANTED: pink, blue & green mirrored Spartons, Deco & mirrored glass, & Coca Cola cooler radios.

Mark Honea, 13201 N.W. 81st
Parkville, MO 64152 Tel: 816-891-2441

---

FOR SALE: Kennedy 281 and 521, $625; Garod R.A.F., $125; Aeriola Senior and Aeriola Amplifier, $350; nice Acme double cone speaker, $39; DeForest D-10 w/crystal, no loop, $400; Weston tube checker, no chart, $12. Many other radios for sale; send SASE for list.

David McKenzie, 516 S. Exeter St.
Eustis, FL 32726

---

FOR SALE: Sangamo Amperé-Hour meter $25; Swan 120 Transceiver $75; National NC200 Transceiver $75; all plus shipping charges.

F. W. Chapman
1130 N. Lake Parker Ave., Apt. B-218
Lakeland, FL 33805

---

WANTED: 1919-22 Radio Amateur News and Radio News; DeForest BC-14 lid, buzzer, nameplate, detector, (or junker set with these parts); parts for DeForest unit panel set; Radiola Senior box and label; good original transformers for Westinghouse DA, Freed Eisemann NR6 (right side), Grebe CR-9; wireless books/catalogs; old tubes w/good filaments. State condition of items, prices accepted, all letters answered.

Marc Gottlieb, 931 Olive
Menlo Park, CA 94025

---

WANTED: Microphones and related accessories used in commercial broadcasting prior to 1960. Cash or trade.

James Steele, 80 Central Park West (#24E)
New York, NY 10023-5206

---

SALE OR TRADE: Dragon Fly Driver, Amplion horn, Radio Age 1922 1st 12 issues. Bound. Misc. Send SASE.
WANTED: 1930 Radio Retailing magazines.

Floyd A. Paul, 1545 Raymond Ave.
Glendale, CA 91201 Tel: (818) 242-8961

---

WANTED: Zenith radios from the mid 1930's (those with wooden cases, circular dials and no push buttons. Have some Zeniths and some battery sets to trade.

Arie Breed, 510 Lake Drive
Ottumwa, IA 52501 Tel: (515) 682-6925

---

WANTED: Early Philco TVs. Models 48-700, 50-701, 50-702, etc. Please state model, condition and price.

Don Lindsly, 5341 S. Garland Way
Littleton, CO 80123

FOR SALE: #30AWG SF silk covered red or white in approx. 1 lb. rolls; #15/41 AWG. Litz wire in 2½ lb. rolls; #40 enamel in 1 lb. rolls; #22 enable in 8 lb. rolls; #27 enable in 5.5 lb. rolls.

Normand Thibault, 15 Carter Ave.
Blackstone, MA 01504

---

SPEAKER REPAIR: Give me a try, lots of parts on hand. Rates reasonable, tell me your needs.

Dixie Speaker Repair Service
545 Shades Crest Road
Birmingham, AL 35226

---

FOR SALE: Very nice Kennedy 110 w/525 amplifier, $950.
WANTED: Pre 1950 78RPM Jukeboxes. Wurlitzer, Rockola, Seeburg, etc. any condition.

Eric vonGrimmenstein
1214 North Meridian Street
Indianapolis, IN 46204 Tel: (317) 849-0563

---

FOR SALE: New items. Upright or chassis mount power transformers for 2.5v sets. $32.50 for the 50ma. and $39 for the 90ma. 1921 Duck catalog, 256 pgs, $18.75. 1928 Rasco catalog, 144 pgs, $8.75. Excellent reprints. Replica "Read Radio News" cast iron paperweights that look like 1 to 100 tuning knobs, almost 6" in dia., circa 1925? $14.95.

Peter Yanczer, 835 Bricken Pl.
St. Louis, MO Tel: 314-1748
Include postage with order.

WANTED: Cabinet for Crosley Model 515 Tombstone or Junker with good cabinet. Also need operator/set-up manual for Electronic Measurements Corp. (EMC) Model 208 tube tester.
FOR SALE: Admiral Model 5R11-N, black, exc. condition. $15.

Bruce C. Pierce, Jr., Star Route
Richlandtown, PA 18955 Tel: (215) 346-7191

---

WANTED: Solar powered radios made by Hoffman, Zenith, Motorola, Admiral, etc. Also early transisterized radios by Sony, Regency, etc., and early transistorized TVs by Sony and the Philco Safari model.

Randy Liebermann, 305 East 40th St., Apt. 5J
New York, NY 10016

---

WANTED: Wiring schematic for Westinghouse receiver, 2 sectional unit, Receiver half-tuner type RA, style 307189, serial 5422, 5-29-22. Detector amplifier side-type DA, style 307190B, serial 141455.

Jerry Schoen, 1000 Rosehill Rd.
Kaukauna, WI 54130

FOR SALE: Lots of various audio transformers and misc. parts. Send SASE for new latest list of sets now available.

Joseph Horvath-W6GPB-522 Third Street
San Rafael, CA 94901

---

FOR SALE: SASE for list of LAB test equipment (41 Tecktronics Scopes, H.P. etc.) retired from Research Lab.

J. Wasiewicz, 229 Sarles Lane
Pleasantville, NY 10570

---

WANTED: Early Hallicrafter sets and literature. Models S-1, S-2, S-3, Super Skyrider-4-5-6-S or SX-S-7 Sky Buddy-S-10, S-11-S-14, SX-16, S-18-DD-1, S-30, S-35, SX-88, SX-100, SX96-HT-1, HT-4, HT-18, HTS-Booklets S-1 through S-6.

Max C. De Henseler, 333 E. 43rd St., Apt. 919
New York, NY 10017

---

WANTED: 2 Amplion AR-19, 2 Amplion AR-114, 1 Amplion AAR111, 1 Amplion AR-65 Drivers.

Eddy Climent, 6585 VIAU
Montreal H1T-2Y8, P.Q. Canada

---

WANTED: For Sparton 39, six (6) tubes. Spartan C686 5 pin UY Base. 3V. 25A. Fil.

John McDougal, Kamloops BC
Canada V2B-7V8

---

FOR SALE: Atwater Kent brown paint duplicated from the inside of the AK20 series, $6 per large spray can plus postage.

John B. Drew, 28 Babcock Rd.
North Stonington, CT 06359

---

WANTED: Floor consoles, looking for Westinghouse, Stromberg-Carlson, Midwest and others. Also phono-combinations.

Gary Ward, 19600 W. 87th Lane
Lenexa, KS 66215 Tel: (913) 888-3375

---

FOR SALE: Collection of misc. sets from deceased collector. Atwater Kent, DeForest, Magnavox and many others, also books and magazines. Send for list.

Mrs. Joanne Enns, 5138-236th St., R#7
Langley, BC Y3A-4RI Canada

---

FOR SALE: Various manufacturers replica catalogues, DeForest, Tuska, Atwater Kent, Kennedy, Wireless Specialty, and others. Fine reproductions! SASE for list.

Arthur Aseltine, 345 Glenwood St.
Ann Arbor, MI 48103

---

FOR SALE: Have many vintage table radios from the 1930s and 40s. Send SASE for free flyer listing radios and hard to find unused vintage tubes and parts. Write to:

Howard Granoff, 2445 Lyttonsville Rd.
Silver Spring, MD 20910

FOR SALE: For your display room, Fahne stock Spring Binding Posts, 14 different kinds mounted on a display board. Cornish Wire Co. Corwico sample wire display boards, #1 has 19 different kinds of sample wire and #2 display board has 14 different kinds of wire. Plus much more. Large SASE for list.

Joseph Horvath-W6GPB-522 Third St.
San Rafael, CA 94901

---

FOR SALE/TRADE: Italian AM and short wave receiver brought to USA following WWII. Unusual receiver. Working order. Also Audiola Crystal set. Need UX or UV-199's on trade. For details call or write:

Paul D. Nevatt, 1114 S. Stewart
Springfield, MO 65804

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ANTIQUE RADIO CLASSIFIED-"The National Publication for Buyers and Sellers of Old Radios and Related Items." Published monthly-features articles, regular columns, photos and many ads. Sample copy, $1.50, or for info contact:

A.R.C., 9511-23, Sunrise Blvd.
Cleveland, Ohio 44133

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BUYING: Whole radio/tv collections and estates. Contact in confidence:

Jim Clark, 1006 Pendleton Dr.
Lansing, MI 48917 Tel: (517) 323-9595

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## Report of the Nominating Committee

The Nominating Committee presents the following slate for the 1986 elections:

| | |
|---|---|
| President | Jim Troe |
| Executive Vice President | Lloyd McIntyre |
| Vice President | Rod Phillips |
| Secretary/Treasurer | Jane and Bill Denk |
| Recording Secretary | Marilyn Johnson |
| Member of the Board of Directors | Col. Gilbert Houk |
| | John Terry |
| Honorary Member | Thorn Mayes |

Respectfully Submitted,

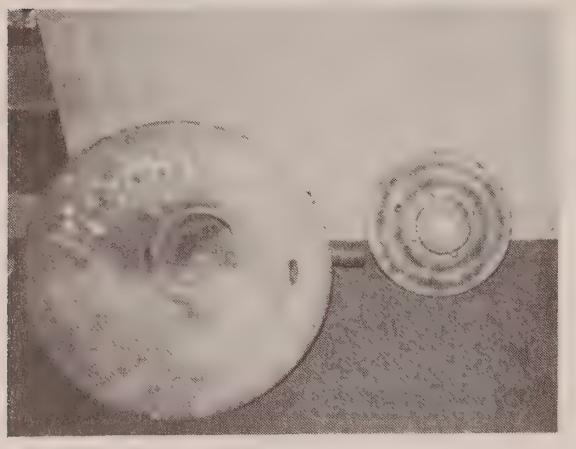
Mel Comer, Chairman
Ross Smith
Les Rayner

## Our newest members

Edward M. Noll, Chalfont, PA
Nicholas Blanda, Ocean, NJ
Linus B. Marlow, Biloxi, MS
Leonard J. Arzoomanian, N. Providence, RI
Donald Friedman, Skokie, IL
Ray Sylvester, Alhambra, CA
Donald Joyce, Maineville, OH
Christopher Templeton, Jamestown, ND
Bernard Hassab, Sarasota, FL
Peter E. Pitcher, Wakefield, RI
Gary L. Ward, Lenexa, KS
Russell L. Andrews, Sr., Cincinnati, OH
G.F. Graber, Ann Arbor, MI
State Historical Society, Madison, WI
Martin Needleman, Annapolis, MD
Keith Gobeski, Saginaw, MI
Norman H. Buchanan, Prattville, AL
H.W. Sparks, El Paso, TX
Paul Kozikowski, Forestville, CT
Paul Himes, Jr., College Station, TX
Mark Honea, Parkville, MI
Dean R. Barber, Riverside, CT
Bryan W. Gadow, Preston, MD
Dick B. Kraayveld, Maasslius, Netherlands
Paul J. Reuss, Lima, OH
R.K. Brunner, S. Charleston, WV
Charles D. Martin, Lutz, FL
Marion M. Hamilton, Willow Alaska
Ronald R. Thomas, Atlanta, GA
Jacques DuBois, Nevilly-sur-Seine, France
George T. Hellman, Richmond, IL
Joel J. Lynn, Washington, DC
Darryl R. Totten, Blue Springs, MO
Karney Nazarian, Laconia, NH
Craig M. Smith, St. Petersburg, FL
William H. Dawson, Washington, PA
James S. Maxwell, Jr., Neffsville, PA

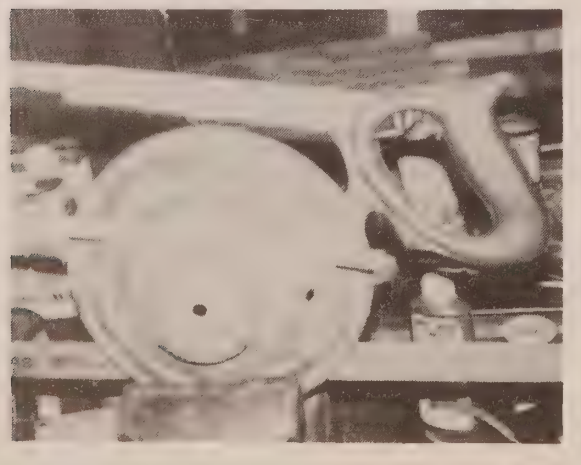
REINSTATE:
John Lucas, Plano, IL
Rev. George Creel, Gadsden, AL
Hollis Hayes, Lapeer, MI

# The revival of an AK horn speaker

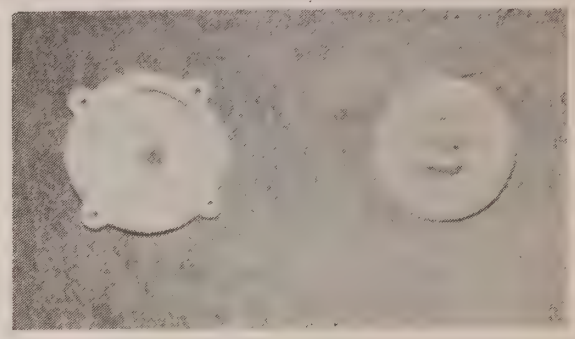


Shows a very sick speaker covered with bird droppings and dirt and broken apart – an "Abandoned Barn Special."

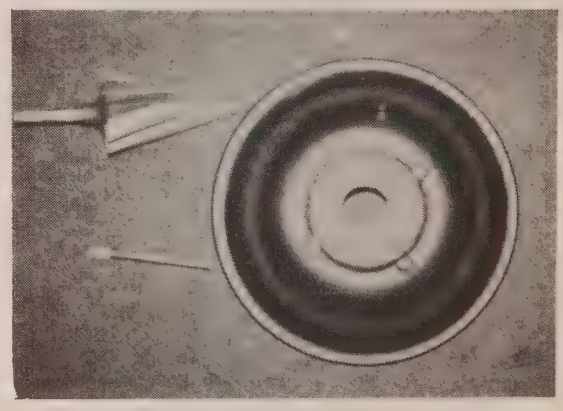
Shows the result of the first step in restoring. Remove the four bolts that fasten the reproducer to the base. Then with a rubber hammer, gently tap the unit upward so there is about 1/16 of an inch spacing between reproducer and base.



Shows the next step. With a fine tooth hacksaw, cut the units apart, going carefully around the circumference. (Note) Do all these operations with a sheet of paper underneath to catch all the chunks of die cast that may fall off.



With luck, you will then have the reproducer in two pieces, top and bottom. (Note) Glue all the broken parts that have fallen off back on (as in a jigsaw puzzle). I use "Duro" fiberglass resin or "3 ton" epoxy for this, but any strong glue will do. All glueing must be done in a warm room and left to set thoroughly, preferably overnight, before proceeding further.



Shows the tools and result of reaming the hole through the reproducer top. Assemble the reproducer top back on the speaker base; then ream from top and bottom, obtaining a diameter equal to the outside of the speaker neck. When this is done, there will be a double tapered hole through the reproducer top. (Note) Do not use a twist drill to do this. The drill hangs up in the zinc die casts, breaking it into small pieces. After reaming both inside and outside (top and bottom) of the reproducer to the correct size, using a drill press, cut out the center of the hole so that the horn will fit, using the small cutter.

Shows the horn inserted into the reproducer top. Cover both the inside of the reproducer hole and the outside of the speaker neck with glue. Insert the speaker neck until its end is flush with the inside surface of the reproducer. Set the speaker upright. Make sure it's correct and leave overnight before proceeding. (Note) All pieces should be glued in place before assembly.

Clean Up

After assembly, wash the speaker. I use Fantastic detergent and cold water. With a scrubbing brush, remove the dirt, etc., from the speaker carefully. Do not remove the original finish. After the unit is clean and dry, using the correct color (I use automobile touch-up paint in spray cans) spray the speaker, using only enough paint to obtain the correct color. Too much paint will cover up the original "wrinkle finish."

Insert the repaired driver into the top section of the reproducer. (Note) In some cases, I have replaced the old driver with a small Utah unit with excellent results. Then glue the cover back on to the top section of the reproducer, making sure it is aligned the same way as when it was sawed off! Don't use too much glue, as it will run into the driver or show on the outside.

Shows the final results. Good looking and working speaker that would have normally gone to the dump.

John B. Drew
28 Babcock Road
North Stonington, CT 06359

## IN MEMORIAM

It is indeed a sad day that I report to our membership the passing of J.A. Moore. He has contributed much to our W.Va. Chapter and our National organization of ARCA. His Chapter news report and articles, with a dash of humor, will be missed by all.

Mr. Moore left behind a legacy with his career with American Electric Power Company and its subsidiary, Appalachian Power Company. He was instrumental in the overseeing, start-up, and then for 10 years the supervision of one of the two largest coal-fired generating plants in the world. His genius of understanding and

putting together man's quest of mechanization, automation, and computerization of such a large and complex plant would leave any mortal man hanging somewhere in the twilight zone.

I believe this was the main reason that the simple, uncluttered radio appealed to him so much. There was nothing that pleased him more than to take in an orphan radio and bring it back to life, and then share that feeling with his friends.

It is a rewarding experience for the young members of our club to have the opportunity to meet and talk to senior pioneers of the great industries of this country – and that is what it has to be about – not a few radios sitting on a shelf collecting dust. The radios tell only a fraction of the story. The real story is told by the great men whom you and I have been privileged to meet and talk to the few short years that they are with us.

Mr. Moore was such a man and with him goes the knowledge and wisdom that will forever be missed.

We express our deepest sympathy to his wife, Violet and their four children.

Lloyd E. McIntyre II
Executive Vice President

## Religion and Radio in 1923

There was considerable controversy in the infant days of radio about the benefits or the lack thereof of broadcasting regular Church services. Some Church leaders were concerned that Church by radio would diminish Church attendance and support of the churches. Others contended it would reach people who did not normally attend and would enhance Church participation and improve the morality of the nation.

In the June 2, 1923 issue of *Radio Digest Illustrated* an address by Reverend Phillips E. Osgood to the Chicago Church Club was rejected. Reverend Osgood was in opposition to broadcasting regular Church services. His remarks are as follows:

"There is many a report that broadcasting Church services is depleting the congregations of the non-broadcasting churches. In some country churches, the percentage may even amount to twenty-five or more.

Hearing a sermon and religious music is not worship. Participation in worship is the essence of worship.

The sick and isolated are after all substantially a minority of the listeners in. There is a great majority of able-bodied town or village dwellers. (I recognize that too many of these would not go to Church anyway, and that they do listen in, more or less, to broadcast services just because they come in over their radio sets.

You can see how the argument runs in the mind of the radio owner. Why should I bother to dress up and plod out (or drive over) to the village Church. The choir over at the Church can't touch the one I can hear over the radio, and our parson, though he's good-as-gold, is no star preacher such as I can hear in Detroit or Pittsburgh or Pasadena.

There is no question at all that weekday sermons and music will reach its proper constituency. Invalids and the isolated can listen as conveniently on a Wednesday evening as on a Sunday morning.

My urgency is only that the churches leave the usual worship time untouched by broadcasting, and that, particularly for the sake of the sick, shut-in and isolated, they undertake the broadcasting of sermons and religious music at some other time, preferably on a weekday."

It appears that Reverend Osgood was sailing into the winds of change. Those with a message to reach the masses were going all out to take advantage of the new and wonderful

thing called "radio." And he was a little impractical in recommending that Church services be rerun during a weekday. There were no simple and inexpensive tape recorders available, like we have had in recent years, to record Sunday services for replay later. The services would have had to be done by hand, so to speak, the choir and preacher reassembled to perform an extra service just for radio.

Reverend Osgood indicated that contributions were very scant from listeners. However, about one year later operators of radio stations were giving thought to the possibility of asking listeners to contribute to the stations so they could continue to hire high class opera singers, big time dance bands and other high class performers to please a public thought to be starving for culture. They had noticed how the money was rolling in to the radio preachers. The business of advertising or buying air time was in the throes of being sorted out. Sponsors of expensive show biz people was just developing and a number of stations were having financial trouble. But they could not promise eternal life in Heaven or threaten eternal damnation in Hell like the preacher could, so they dropped the notion of asking for donations and pressed on seeking advertisers.

If Reverend Osgood was around today, he would observe that thousands of churches broadcast their regular services at both regular times and irregular times by using recording equipment. He, also, would be amazed at how scant contributions in 1923 have grown to the multi-millions. Such is the power of Radio and TV.

J. A. Moore

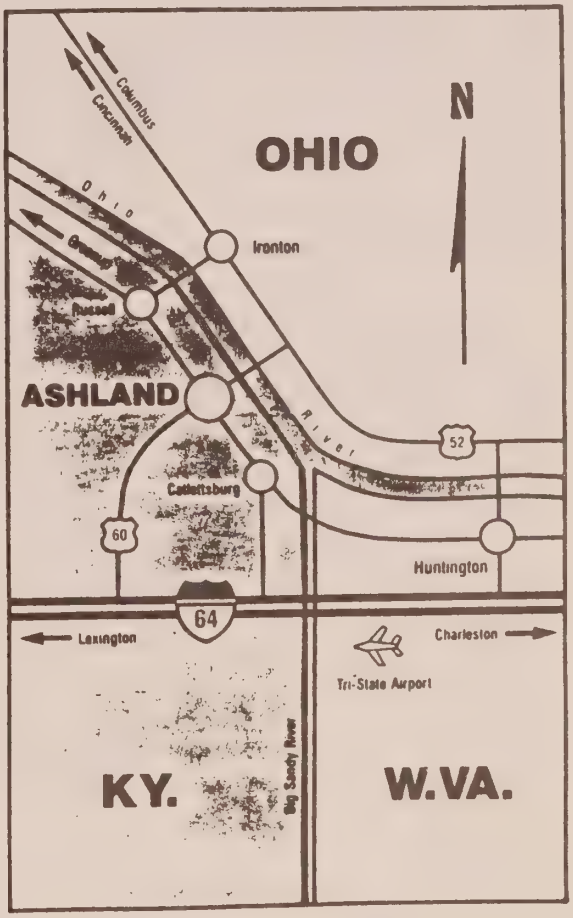
## WELCOME TO ASHLAND

We would like to invite each of you attending the Louisville conference in June to visit the Kentucky Highland Museum. The Kentucky Highland Museum Society welcomes your visit and comments regarding the West Virginia Chapter's presentation of "Radio, History In The Making."

The director and staff of the museum are proud to present this moment in history and hope that it furthers the understanding of man's quest to communicate. Our staff will be there to greet you on your arrival and our hours of operation are Tuesday thru Saturday, 10:00 am - 2:00 pm; Sunday, 1:00 pm - 4:00 pm.

Eddie Philpot
Museum Director

The map below is your permanent record of the location of the museum.




## To The Editor

SCARS

Dear Editor,

We had our 1st quarterly meeting at the Burbank Lockheed Employee's Recreation Club, with rain, Feb. 15. One meeting in 10 years (40 meets). That's a 2½ chance of rain and it may

be 10 more years before we get rain. Fortunately, there was an inside room (maybe 30' x 60' and we got some 17 sellers and 70+ buyers. For a rainy day, I felt we had a good meeting. One set sold for $3,450.00, a Marconi and lots of parts, tubes and speakers. 8 people from Phoenix (over 400 miles), 6 from Palo Alto area (400 miles), one from Visalia (guess 250) and one from Canada (1700 miles). Our club is truly becoming interstate. Our club is over 400+ members, some 8 from Japan, France, Canada, New Zealand and Austalia. We had 43 members sign up since our last meeting.

We welcome out of state members (over 70 in our club) and will send a free copy of our Gazette to any ARCA member who sends me 40¢ in stamps and requests one.

SCARS
Floyd A. Paul, President
1545 Raymond, Glendale, CA 91201

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I'm enjoying your Gazette. James Fred has answered two questions for me and all other articles are excellent. Wish I knew enough to contribute. Keep up the good work.

Especially enjoyed the J. McKinnon article on "DXing the AK 20." Mine is working well and gets in KNBR (680) San Francisco, KDO (850) Denver-a goodly distance from Tucson. (Using WIZARD 01A's)

Working on a Radiola 20 now with two thumb wheels! Wow! Much fun. Glad I got into this.

Frank Schmidt

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To the Editor:

Why do people beat their heads against brick walls? Why do they ignore human nature and then get bent out of shape because they can't change it? There were two prime examples in the last Gazette.

First, a lament on page 1 that ARCA has wasted precious funds to send by-law ballots to members who won't vote. No fooling! I didn't vote, and here's why: I get this ballot in the mail, I open and read it, and decide the proposed changes look fine to me, and am sure that 99% of other members will agree. Now if I vote, these changes will undoubtedly go through, and if I don't vote, exactly the same thing will happen. So the ballot goes into the waste basket, and I've saved myself 22¢ and some time. A waste of ARCA funds? You bet — just why *do* we send out ballots that nobody will return?

Then we have the old complaint that there's no New England ARCA chapter, and that of all the letters sent out to area members, only two replied. Surprise! Sure, I got one of those letters. I have a choice: I can write a reply saying "no, I'm not interested; we have all the benefits of a club without the organizational problems, but feel free to create one if you like," or I can *not* reply, which sends the same message, with much less effort, and no personal feelings toward the sender. Rather than berate the members for the *way they choose to send the message,* why not just accept it?

To be more specific about New England: we already have several swap meets each year. I attended my first meet at the Merriams' museum in Rhode Island in 1974, and there were events there long before that (even an AWA annual meet before it got too large to move around). Dave Crocker organized his first local meet in Plymouth in 1977, and since then, he and Rich Foster have been hosting about two per year, Chet Wisner has held two at Dalton, and John Drake has arranged two ARCA-affiliated ones. The mailing list has always been available to anyone wanting to host one. Last summer the radio fans had a section of the "Yankee Steam-Up" at the Merriams', an arrangement that apparently worked well and will be continued. Ralph and Elinor Williams will no doubt be holding more events in Orient.

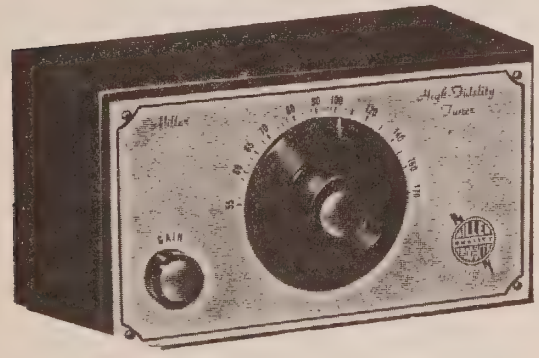
If the purpose of a club is good fellowship and better radios, we have that now, so who needs all the organizational trappings? Dues nobody

wants to pay, officers nobody wants to be, business meetings nobody wants to attend, bulletins nobody wants to edit, write for, print or mail. I say count your blessings, and consider holding a small meet in your area. A club doesn't do these things–its *members* do.

Alan Douglas
Box 225, Pocasset, MA 02559

## The Miller Crystal Tuner
### by Walter Sutton

All radio collectors are aware of the crystal sets of the 1920s with cats whiskers and tapped coils. Some have built replicas, using original or modern parts. But how many know of the crystal tuner made by the J.W. Miller Company in the 1950's and 1960's? The Miller Company, famous for its coils, variable capacitors, and chokes, called it the Number 595 High Fidelity Tuner.




The Miller tuner uses a modern germanium diode and has a sophisticated double-tuned circuit with negative mutual coupling for increased efficiency. Like all crystal sets, it has limited sensitivity, very low output (several hundreths of a volt on weak stations), and broad tuning. For flat response it should drive the microphone input of an older hifi amplifier. Since today's amps have no mike inputs, I have to use the tuner with the phono input, which is equalized by boosting the bass and cutting the treble. The result is a skewed frequency response.

Although the tuner is designed for local reception, with Cci increased to 20 or 25 pfd. and a long antenna, I can get stations a hundred miles away.

The tuner cost about $20 in kit form and $25 assembled back in the 1960's. I bought the kit. Because there are so few parts, assembly was easy. It took me only a couple of hours to put mine together. I had my choice of either a black or ivory cabinet. Early tuners have a brass front panel and a fiber rear; later tuners have an anodized aluminum front panel and no rear panel at all, but the circuit remains unchanged. Overall dimensions are 4" high by 7" wide by 4" deep.

If one listens to AM stations, one soon learns two things. Since almost no one listens on good quality receivers, few stations are really concerned with wide frequency response and dynamic range. Moreover, the kind of music available in most areas is limited to rock, country, or background—no classical at all to truly test the Miller.

Only a small number of radio makers have ever tried to produce an AM tuner with wide frequency response. Before World War II, E.H. Scott, McMurdo Silver, and Avery Fisher made a few, and, after the war, Fisher, Dynaco, Eico, Miller, and McKay Dymek also made some. In the 1970's the last named company made the one high-quality AM-only tuner of recent years. Today even the best AM-FM tuners have mediocre AM sections, with frequency response falling off rapidly after 3.5 or 4 kHz.

If stations and makers really wanted to, they could provide equipment producing very good local reception, almost as good as FM. Perhaps, with AM stereo, we'll see some change. It won't come soon.

Walter A. Sutton
2530 Louisiana St.
Beaumont, TX 77702

## Soldering

A chain is no stronger than its weakest link. In radio construction, soldering has proven to be the weak link. Even today, millions of dollars are

spent remedying and avoiding badly soldered joints. In TV manufacturing, modules and boards are automatically soldered on wave soldering machines or by carefully controlled laser and infrared radiation bonders. But if the person handling the parts or boards permits contact with his body oils or dirt even from touches by his apparently clean hands, solder neither wets nor bonds the contaminated part.

Solder can hold a joint together for years and then break down. To the uninitiated, the cause will seem obscure or even diabolical. Careful analysis reveals, however, foreign material inclusion or penetration, thermal stressing, crystallization, incompatible materials (lack of wetting) or incorrect joint design to be the avoidable underlying cause.

A radio collector recognizes an early classic flaw: the effects of corrosion that resulted from externally heated soldering coppers, overheated in a stove or on a blow torch, cleaned with sal ammoniac, used with bar solder and acid flux. Great globs of solder hid the included foreign material that ultimately removed the wetted conductor interface and let partially conductive oxides form in the joint.

Electrically heated irons went a long way toward making good joints easy. Rosin flux permitted easy wetting of nearly clean surfaces and excellent flow of fluid solder around the elements of the joint. A remaining bugaboo of the old days was insufficient melting and the consequent weakness of the crystallized solder—the infamous cold-soldered joint.

Most of us are familiar with pencil irons. They have inherent heat-limiting capacity and excellent temperature control. They make work on printed circuit boards as easy and reliable as the larger irons do on radios of the thirties, forties, and fifties, but for antique radio work, they are too small. For radio restorers, the soldering gun is an excellent all-around tool. The Weller D440 (145-210 watts, 120 volts, 60 Hertz) with its changeable tips gives plenty of heat, easy control, and clearances to work on just about any restoration or repair. They are available from discount stores and supply houses, usually costing from $12.45 up, depending on the supplier.

One characteristic of these irons is worth pointing out. The quickness of heating and the heat capacity of the iron are directly related to the conductance of the clamp joints between the tip wires and the remainder of the single-turn secondary of the transformer. The two hex-headed clamping nuts must be tightened securely, not only when a new tip is installed but regularly during the life of the tip. Under heat cycling, the wires inside the clamps continue to deform and result in loose clamp nuts, oxidized conductor surfaces, substantially reduced secondary current, and slow heating.

Good soldering is an easily learned technique but it takes more than a little practice and discipline to make good joints regularly. Here are some helps:

1. Carefully clean both parts of the joint so that the parent metal is free of oxide, contaminant and foreign material.
2. Tin both elements before attemping to flow the joint. If one is not tinned, you're due for trouble, so stop and complete the tinning. Then form the joint mechanically and flow with solder. If the joint is cleanly tinned and well fluxed, the solder will fill the voids like magic.
3. Use good quality solder, preferably with included flux and having not less than 40% tin (60/40).
4. Use only a small amount of solder, no hickory nuts, and no master sculptures. Aerospace standards specify that the joint elements (wires, posts, holes) will remain visible after the joint is finished.
5. Solder is a poor conductor. The parent metals of the joint should be in contact before soldering.
6. A solder joint should wet, flow and hold on the first attempt. A second heating can reduce the reliability because of burned flux,

oxidization and damaged adjacent surfaces (insulators and supports).

7. Do not depend on the solder for joint strength especially on springy materials.
8. Older materials such as resistors and condensors that have been stored in your shop for a decade will be heavily oxided. Scrape or abrade to clean, then retin.
9. Litz wire and some tinsel cords have individually enamelled strands. These are too small to scrape, too dirty to heat directly, and too delicate to handle like ordinary wire. While they can be stripped chemically, the residue is more trouble than can be easily handled. Fan the conductors and abrade with number 400 wet-or-dry abrasive paper. Tin and solder the litz directly, but wrap the tinsel with several turns of tinned #36 wire before heating to protect the flex core of the tinsel.

When you get to feeling your're a quality solderman, try to duplicate the joints on the underboard wiring of an Atwater Kent breadboard. When you can do them as the factory did, give yourself a big "S" for Super-Solderman.

Frank Nichols
720 E. Eldorado Ave.
Appleton, WI 54911

# TELEVISION TOPICS

In the search for television artifacts there is a big advantage in working together. Sometimes this is with another collector or group of collectors. Even collectors in other fields may be helpful. In hunting for their own articles they may run across something of interest to you. Antique televisions come out of the same surroundings that radios do. Radio collectors sometimes discover these televisions and then offer them for sale later at various hamfests and flea markets.

Some television collectors join radio clubs and organizations. Some of these groups publish articles about television in their news letters and bulletins. The Antique Wireless Association has a display of television receivers in their museum and recently established an award and issued a plaque for that type of historical contribution. Other displays were made on 53rd Street in New York City, in Chicago and also Kentucky.

Actual demonstrations of early mechanical scanning have been made by Robert Lozier, Thomas Burgess, Richard Brewster and Dr. Edmund Taylor. The show – "50 Years of Television" – made people realize television history goes further back than they thought.

Television collecting is still a very recent collecting field and the artifacts recognized as antique are becoming rare and hard to find. These receivers are not generally recognized as valuable antiques and are often thrown out in the trash. The habit of saving, treasuring and accumulating things that interest people was what made collectors. There seems to be a lessening of this trend as time goes on.

Many of the enthusiastic television collectors seem to be middle age or younger – in the 35 to 40 group – living in apartments where space is limited. As they were born after World War II, their memory does not go back as far as the ordinary collector and they are interested in more recent things. Lately there have been a number of collectors picking up old early model receivers in anticipation of selling them later at a substantial profit. Most of them did not wait long enough and were disappointed. The receivers took up valuable room and did not get much attention so they sold or got rid of them.

Recent collector, Peter Yanczer of St. Louis MO, is constructing all sorts of disc combinations – Roger White of Arlington is moving and has a Philco Perdicta for sale – and Thomas Judd just got his first collectors item, a three inch Pilot.

Now that winter is almost over and collecting activity will be starting again, let us hear from each of you – what you are doing – what you are finding – what you have and what you would like to get. Maybe we can help you!

CONDITION OF THE COUNTRIES

In Europe the mechanical television era and the electronic period mingled with each other and for a while were operating side by side and alternating day to day in the same place. In the United States the mechanical period flourished during the economic growth from 1926 to 1931 and was destroyed by speculative investors and the business slump that followed. There was a long gap between the time discs and drums were discontinued and electronic programs were transmitted and received. This was partly due to the effect of depression in the economy and partly because of the difficulty in establishing standards for an efficient and approved method of broadcasting.

In order to have successful television reception, the Radio Manufacturers Association developed a set of standards sufficiently broad to permit improvements in the future and guarantee the purchasers of television receivers years of service and the possibility of receiving programs broadcast within range. In 1931 a board of seven commissioners was appointed by the President to regulate and license all electrical systems including television, radio, telephone, telegraph and cable systems.

Then the economy started to improve. In 1936 C.C.C. camps were started for the boys, W.P.A. was established for the men, social security began for the elderly, and electronic television started to materialize.

FIRST ELECTRONIC RECEIVERS IN AMERICA

Although transmitting images with scanning discs and other mechanical means continued in the thirties, larger discs with more holes were used and the images were received on cathode ray tubes. The first receivers offered to the public were produced by the Commission Systems which later became the American Television Corporation. They were sold in New York and Boston areas where telecasts by WIXG were available. Two models were produced – one with a three inch screen in a cabinet, which also contained a radio for the broadcast band of 200 to 550 meters, priced at $250. The other one resembled a floor model ashtray. It had a five inch tube which changed from a horizontal position to a vertical one and slid down inside the bottom when not in use. It was called the "Kinet" and cost $150. These sets had four vacuum tubes in sweep circuits – a 57, a 1284, and two 970's. The receivers simply replaced the speaker on an ordinary radio. If you wanted to hear any sound, another radio tuned to another synchronized channel at another station was needed.

K. McIntosh
T.V. Editor

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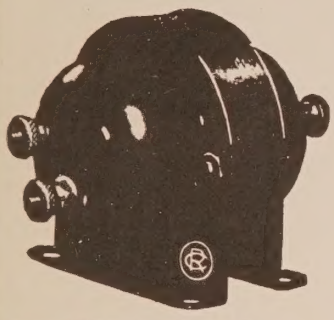
ARCA
ANTIQUE RADIO CLUB
of AMERICA

# For Receiving Circuits



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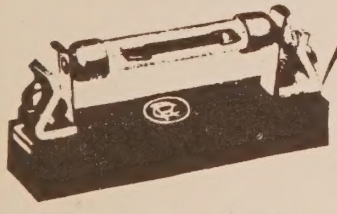

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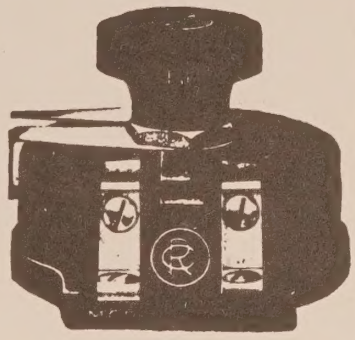

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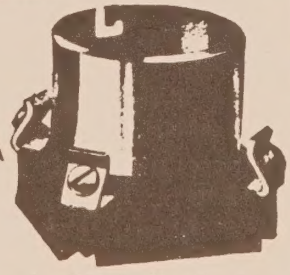

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